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No. 96-1133

Supreme Court, U.S.
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IN THE
Supreme Court of the United States
OCTOBER TERM, 1997

UNITED STATES OF AMERICA,
Petitioner,
v.

EDWARD G. SCHEFFER,
Respondent,

On Writ of Certiorari to the
United States Court of Appeals
for the Armed Forces

**BRIEF FOR AMICUS CURIAE
AMERICAN POLYGRAPH ASSOCIATION
IN SUPPORT OF RESPONDENT**

GORDON L. VAUGHAN
VAUGHAN & DEMURO
111 South Tejon, Suite 410
Colorado Springs, CO 80903
(719) 578-5500
*Counsel for Amicus Curiae
American Polygraph
Association*

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**BRIEF FOR AMICUS CURIAE
AMERICAN POLYGRAPH ASSOCIATION
IN SUPPORT OF RESPONDENT**

INTEREST OF AMICUS CURIAE

The American Polygraph Association (APA) was established in 1966 and is a professional association of over 1,800 polygraph examiners and academic researchers in the private sector, law enforcement, and government fields. The APA was formed by the merger of the Academy of Scientific Interrogation, the American Academy of Polygraph Examiners, the National Board of Polygraph Examiners, and the International Association of Polygraph Examiners.

The objectives of the APA are that of advancing the use of the polygraph as a science and a profession. APA members have a particular interest in ensuring that this Court is informed about the modern polygraph instrument and examination procedure, the current research on the validity of polygraph results, and the legal issues implicated by a *per se* exclusion of polygraph evidence.¹

SUMMARY OF ARGUMENT

I. In order to maintain restrictions on a defendant's Sixth Amendment right to call witnesses in his favor, petitioner must demonstrate that such restriction is not arbitrary or disproportionate to the purpose it is designed to serve. *Rock v. Arkansas*, 483 U.S. 44 (1987), and *Chambers v. Mississippi*, 410 U.S. 284 (1973). In the context of a complete and wholesale exclusion of a class of scientific evidence, petitioner bears the burden of repudiating, by clear evidence, its validity. *Rock* at 61.

Petitioner's attempt to establish an artificially low standard of review for *per se* restrictions on a class of scientific evidence—that the *per se* exclusion of polygraph evidence is constitutional so long as it is reasonable and

¹ Consent letters have been filed with the clerk.

serves a legitimate interest—is based on the general principle that a defendant's right to present relevant evidence in his defense is not absolute. While Amicus does not dispute this general principle, *Rock* and *Chambers* demonstrate that it is not the controlling principle where a wholesale exclusion of a class of scientific evidence is under review.

II. In the wake of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), a number of federal circuit courts of appeals, recognizing the advances made in polygraph instrumentation, technique, and research, have rejected judicially-imposed *per se* rules against the admissibility of polygraphs. This trend is continuing, and several federal district courts have, applying a *Daubert* analysis, found polygraph evidence admissible.

III. The modern polygraph instrument and testing technique has undergone a great deal of improvement and scientific validity testing. The scientific literature indicates that the control question polygraph technique has high accuracy rates in the average range of 90%; an accuracy rate considerably better than some traditionally accepted types of evidence. Additionally, improvements in the education and training of polygraph examiners have enhanced the reliability of polygraphs.

IV. Research does not support petitioner's argument that a trier of fact would be unduly swayed by polygraph evidence. Further, polygraph evidence is not unique as an indicator of witness credibility and does not impermissibly intrude on the function of the jury.

V. The admission of polygraph evidence will not unreasonably burden the courts. States may establish reasonable guidelines for the admission of polygraph evidence at trial.

ARGUMENT AND AUTHORITY

I. THE *PER SE* EXCLUSION OF POLYGRAPH EVIDENCE BY MILITARY RULE OF EVIDENCE 707 VIOLATES RESPONDENT'S SIXTH AMENDMENT RIGHT TO PRESENT A DEFENSE

In *United States v. Scheffer*, 44 M.J. 442 (C.M.A. 1996), it was held that where the defendant "testified, placed his credibility in issue, and was accused by the prosecution of being a liar," the "*per se* exclusion of polygraph evidence offered by an accused to rebut an attack on his credibility, without giving him an opportunity to lay a foundation under Mil.R.Evid. 702 and *Daubert*, violates his Sixth Amendment right to present a defense." 44 M.J. at 445. The Court of Military Appeals relied, in part, on the framework for examining constitutional challenges to *per se* exclusions of evidence set out in *Rock v. Arkansas*, 483 U.S. 44 (1987),² and the general approach of relaxing the traditional barriers to expert opinion testimony discussed in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).³

In *Rock*, this Court reversed Arkansas' *per se* exclusion of hypnotically-refreshed testimony that had worked to limit the testimony of the defendant. Finding defendant's right to testify to be a fundamental right, *Id.* at 51-53, this Court observed:

restrictions of a defendant's right to testify may not be arbitrary or disproportionate to the purposes they are designed to serve. In applying its evidentiary rules a State must evaluate whether the interests served by a rule justify the limitation imposed on the defendant's constitutional right to testify.

Id. at 55-56. In order to demonstrate that a complete and wholesale exclusion of a class of scientific evidence was not arbitrary and disproportionate to the purpose it was designed to serve, this Court placed on the state of Arkan-

² *United States v. Scheffer*, 44 M.J. at 445-446.

³ *Id.* at 446.

sas the burden of repudiating, by clear evidence, the validity of all post-hypnosis recollections. As set forth by the Court:

A State's legitimate interest in barring unreliable evidence does not extend to *per se* exclusions that may be reliable in an individual case. Wholesale inadmissibility of a defendant's testimony is an arbitrary restriction on the right to testify in the absence of clear evidence by the State repudiating the validity of all posthypnosis recollections.

Id. at 61. As a defendant's right to present evidence in his or her defense is a fundamental right,⁴ petitioner's wholesale exclusion of polygraph evidence found in Mil.R. Evid. 707 should be tested against the same standard for arbitrariness and disproportionality, as was hypnotically-refreshed testimony in *Rock*, requiring a clear demonstration from respondent of the unreliability of polygraph evidence in all cases.

Petitioner views *Rock* more narrowly, drawing a distinction between the constitutional right of a defendant to testify on his own behalf as opposed to calling witnesses in his favor. Petitioner's Brief at 35. However, in reaching its conclusion that "Arkansas' *per se* rule excluding all posthypnosis testimony infringes impermissibly on the right of a defendant to testify on his own behalf," 483 U.S. at 62, this Court did not limit its analysis to the testimony of the defendant. In *Rock*, this Court relied, in part, on its decision in *Chambers v. Mississippi*, 410 U.S. 284 (1973), where a state's hearsay rule was determined to be unconstitutional on the ground that it abridged a defendant's right to present witnesses in his own defense. *Rock*, 483 U.S. at 55. In *Chambers*, this Court held Mississippi to the same burden of demonstrat-

⁴ This Court observed in *Rock* that "the Sixth Amendment, which grants a defendant the right to call 'witnesses in his favor,' logically includes 'the accused's right to call witnesses whose testimony is 'material and favorable to his defense.'" *Rock* at 52 (citing *Washington v. Texas*, 388 U.S. 14, 17-19 (1967), and *United States v. Valenzuela-Bernal*, 458 U.S. 858, 867 (1982)).

ing the unreliability of the proffered testimony of a witness for the defense. Summarizing *Chambers*, this Court noted in *Rock*:

In the Court's view, *the State in Chambers did not demonstrate that the hearsay testimony in that case, which bore "assurances of trustworthiness" including corroboration by other evidence, would be unreliable, and thus the defendant should have been able to introduce the exculpatory testimony.*

Rock at 55 (emphasis added).

The court in *United States v. Scheffer* observed that the defendant's testimony in *Rock* and the presentation of polygraph evidence in the present case concerning exclusion of evidence supported the truthfulness of the defendant's testimony and could "perceive no significant constitutional difference between the two" because "[i]n either case, the Sixth Amendment right to present a defense is implicated."⁵ 44 M.J. at 446. A similar unwillingness to confine *Rock* to testimony of a criminal defendant was expressed in J. McCall, *Misconceptions and Reevaluation—Polygraph Admissibility After Rock and Daubert*, 1996 U. Ill. L. Rev. 363 (1996) [hereinafter McCall, *Misconceptions and Reevaluation*]. There, the author stated that *Rock* established the basic components in developing a constitutional right to introduce exculpatory evidence in criminal trials (McCall, *Misconceptions and Reevaluation*, at 392) and concluded that "[t]he *Rock* opinion is most logically read to establish a Sixth Amendment right to call exculpatory witnesses whose testimony may be subject to a known, but manageable, risk of inaccuracy." *Id.* at 408.

Petitioner ignores the analysis in *Rock* and *Chambers* and argues that *per se* restrictions on evidence are constitutional merely "if they are reasonable and serve legi-

⁵ Although not discussed in *Rock*, it is reasonable to presume that *Rock* would also encompass the defendant's right to call an expert regarding the science of hypnotically-refreshed testimony.

timate interests." Petitioner's Brief at 14. Petitioner's attempt to establish an artificially low standard of review is based primarily on the general principle that "a defendant's right to present relevant evidence in his defense is not absolute" and must follow established evidentiary rules. Petitioner's Brief at 15. Amicus does not dispute this general principle but does dispute that it is the controlling principle when the precise issue is a *per se* exclusionary rule.

On this basis, petitioner's citation to *Crane v. Kentucky*, 476 U.S. 683 (1986), and *Montana v. Egelhoff*, — U.S. —, 116 S. Ct. 2013 (1996), is unpersuasive. *Crane* did not address a *per se* exclusion of a class of evidence but addressed a trial court's determination not to allow testimony about the circumstances of a defendant's confession. In that context, though reversing the trial court's decision, this Court reaffirmed those cases granting trial courts wide latitude in making evidentiary decisions. *Egelhoff* addressed a Montana statute that excluded evidence of voluntary intoxication when a defendant's state of mind is at issue. That decision was based on the power of a state to define crimes and defenses, not on the type of *per se* exclusionary rule of evidence addressed in *Rock*, *Chambers*, and the present case.

Accordingly, the issue is not whether respondent's *per se* exclusion of polygraph evidence is reasonable and serves a legitimate interest but, rather, in the circumstances of this case, whether respondent has clearly demonstrated that polygraph evidence is unreliable in all cases. Under either test, however, the *per se* exclusion of polygraph evidence under Mil.R.Evid. 707 violates a defendant's Sixth Amendment right to present a defense.

II. THERE IS INCREASING JUDICIAL SUPPORT FOR REMOVAL OF EVIDENTIARY BARRIERS TO POLYGRAPH EVIDENCE

Petitioner claims that the reasonableness of a *per se* exclusionary rule for polygraph evidence is supported in part by "[w]idespread judicial support for a prohibition on

polygraph admissibility." Petitioner's Brief at 31. Petitioner's argument fails to acknowledge in an adequate manner the recent decisions of federal circuit courts of appeals, especially those after *Daubert*, which have removed the evidentiary barriers to polygraph evidence.

The stage was set in the circuit courts in a pre-*Daubert* decision, *United States v. Piccinonna*, 885 F.2d 1529 (11th Cir. 1989). There, a criminal conviction was vacated and the case was remanded to reconsider the admissibility of the defendant's polygraph test results. The court of appeals, observing "tremendous advances" in polygraph instrumentation and technique and the progress in the science of polygraphy, reasoned that even under a strict adherence to the traditional standard in *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923), "it is no longer accurate to state categorically that polygraph testing lacks general acceptance for use in all circumstances." *United States v. Piccinonna*, 885 F.2d at 1532.

This Court's decision in *Daubert* led a number of circuit courts of appeals to join the Eleventh Circuit decision in *Piccinonna* and withdraw the *per se* rule of inadmissibility of polygraph evidence. Other leading circuit court of appeals decisions reflecting this change include *United States v. Kwong*, 69 F.3d 663, 668-69 (2d Cir. 1995), — U.S. —, *cert. denied*, 116 S. Ct. 1343 (1996) ("assuming that polygraph results are admissible under Rule 702," but not reaching that holding because the record was insufficiently developed and the results were properly excluded under Rule 403), *United States v. Posado*, 57 F.3d 428, 432 (5th Cir. 1995) (after *Daubert*, a *per se* rule is "no longer viable"); *United States v. Sherlin*, 67 F.3d 1208, 1216 (6th Cir. 1995) (the decision to exclude polygraph evidence is "within the sound discretion of the trial court," but was properly excluded here under Rule 403); *United States v. Williams*, 95 F.3d 723 (8th Cir. 1996) (discussing the offer of polygraph evidence under a *Daubert* analysis, but holding that the district court did not abuse its discretion in excluding the evidence under Rule 403); and *United States v. Cordoba*, 104 F.3d 225,

228 (9th Cir. 1997) ("we hold that *Daubert* effectively overruled . . . [the] per se rule under Rule 702 against admission of unstipulated polygraph evidence").

The rationale for the elimination of judicially-imposed *per se* exclusions of polygraph evidence may have been best explained by the Fifth Circuit Court of Appeals in *Posado*:

Current research indicates that, when given under controlled conditions, the polygraph technique accurately predicts truth or deception between seventy and ninety percent of the time. Remaining controversy about test accuracy is almost unanimously attributed to variations in the integrity of the testing environment and the qualifications of the examiner. Such variation also exists in many of the disciplines and for much of the scientific evidence we routinely find admissible under Rule 702.

57 F.3d at 434 (footnotes omitted). Therefore, contrary to petitioner's suggestion, there is widespread and increasing support for removing the barriers to polygraph evidence.

Petitioner concedes that "several courts of appeals have retreated from the categorical exclusion of polygraph evidence," but that no court of appeals has concluded that polygraph testing is scientifically valid or that the results of a polygraph test were reliable enough to be admitted into evidence. Petitioner's Brief at 33-34. Petitioner fails to note that it is only recently that the circuit courts of appeals, in the wake of *Daubert*, have begun issuing opinions withdrawing judicially-imposed *per se* rules against polygraph admissibility. In fact, district court decisions are now emerging wherein the trial court judges have performed a *Daubert* analysis and determined that polygraph evidence is admissible in certain circumstances and for certain purposes. See, e.g., *United States v. Galbreth*, 908 F. Supp. 877 (D.N.M. 1995); *United States v. Crumby*, 895 F. Supp. 1354 (D. Ariz. 1995). These carefully considered opinions indicate that district courts are able to perform the "gatekeeper" role which this Court stated in *Daubert* it expected them to perform.

III. THE WEIGHT OF SCIENTIFIC RESEARCH SUPPORTS THE USE AND RELIABILITY OF POLYGRAPHS

A. The Polygraph Instrument and Testing Technique

The polygraph instrument and testing technique used for modern physiological assessment of deception bears little similarity to the instrument and technique assessed by the court in *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923).⁶ As described in *United States v. Galbreth*, 908 F. Supp. 877, 883 (D.N.M. 1995):

The machine scrutinized in *Frye* was a standard blood pressure type device comprised of a microphone and a cuff that measured the subject's blood pressure. The examiner asked the subject a series of questions during which time the examiner periodically took the subject's blood pressure.

These blood pressure recordings were not continuous and no apparent formal analysis was conducted. C. Honts & B. Quick, *The Polygraph in 1995: Progress in Science and the Law*, 71 N.D. L. Rev. 987, n.3 (1995) [hereinafter Honts & Quick, *The Polygraph in 1995*].

The modern polygraph instrument "record[s] measures from at least three physiological systems that are controlled by the autonomic nervous system." *Id.* at 989-90. As summarized in *Galbreth*, 908 F. Supp. at 883:

It measures respiration at two points on the body; on the upper chest, the thoracic respiration, and on the abdomen, the abdominal respiration. Movements of the body associated with breathing are recorded such that the rate and depth of inspiration and expiration can be measured. The polygraph machine also measures skin conductance or galvanic skin response. Electrodes attached to the subject's finger-

⁶ See *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 587 (1993) ("[t]he *Frye* test has its origin in a short and citation-free 1923 decision concerning the admissibility of evidence derived from a systolic blood pressure deception test, a crude precursor to the polygraph machine").

tip or palm of the hand indicate changes in the sweat gland activity in those areas. In addition, the polygraph measures increases in blood pressure and changes in the heart rate. This measurement, known as the cardiovascular measurement, is obtained by placing a standard blood pressure cuff on the subject's upper arm. Finally, the polygraph may also measure, by means of a *plethysmograph*, blood supply changes in the skin which occur as blood vessels in the skin of the finger constrict due to stimulation.

See also D. Olsen et al., *Recent Developments in Polygraph Technology*, 12 Johns Hopkins Applied Physics Laboratory, Technical Digest 347, 348 (1991) [hereinafter Olsen et al., *Recent Developments*]; D. Weinstein, *Anatomy and Physiology for the Forensic Psychophysicologist*, Department of Defense Polygraph Institute (1994). There is little controversy in the scientific literature regarding the accuracy of these recordings of physiological responses. 1 P. Giannelli & E. Imwinkelried, *Scientific Evidence* 217 (2d ed. 1993) [hereinafter Giannelli & Imwinkelried, *Scientific Evidence* 2d].

Stated briefly, the scientific theory underlying modern polygraph assessment of deception is that due either to "cognitive processing or emotional stress," there are recordable and measurable physiological reactions to deceptive responses, such as a response to a question involving the matter under investigation which the subject is unable to inhibit. Olsen et al., *Recent Developments*, at 347. As described in *United States v. Galbreth*, 908 F. Supp. at 884:

the underlying scientific theory upon which the modern polygraph technique is based is derived from the notion that if a person is threatened or concerned about a stimulus or question, such as a question addressing the matter under investigation, that this concern will express itself in terms of measurable physiological reactions which the subject is unable to inhibit and which can be recorded on a polygraph instrument.

Until approximately 1950, most polygraph testing used the relevant/irrelevant (R/I) question format. McCall, *Misconceptions and Reevaluation*, at 378. Generally, the R/I test compares the relative physiological reactivity of irrelevant questions (questions not related to the matter under investigation) and relevant questions (questions pertaining to the matter under investigation). *Id.* at 410 n.333. Since its development in 1947,⁷ the control question (CQ) format has been the most widely used polygraph technique.⁸ Rather than comparing the relative physiological reactivity of relevant and irrelevant questions, the CQ technique compares relative physiological reactivity of deceptive responses to troubling but inconsequential questions (control questions) and relevant questions. The CQ test is summarized as follows:

In the CQ test, the subject is asked to answer a number of "control" (meaning stressful, but logically distinct from the incident that is the subject of the examination) questions that are intended to provoke anxiety and a false denial. Thus, if the person being examined is suspected of committing a theft on January 10, 1996, a valid control question would be, "During the five year period from January 1, 1991, to December 31, 1995, do you remember stealing anything?" The assumption is that the subject will answer in the negative but suffer some doubts and experience anxiety (and show a strong physiological reaction) in considering the question. Relevant questions relating to the incident under investigation ("Did you steal the wallet of your coworker on January 10, 1996?") are interspersed among the control

⁷ J. Reid, *A Revised Questioning Technique in Lie-Detection Tests*, 37 J. Crim. L. & Criminology (1947). The CQ format is, today, a family of related techniques, all derived from Reid's original procedure. J. Matte, *Forensic Psychophysiology Using the Polygraph: Scientific Truth Verification—Lie Detection* 250 (1996) [hereinafter Matte, *Forensic Psychophysiology*].

⁸ The R/I continues to be a popular technique in employee screening situations. P. Minor, *The Relevant-Irrelevant Technique*, in *The Complete Polygraph Handbook* 143 (S. Abrams ed. 1989).

questions. An innocent subject will show significantly less physiological reaction when truthfully denying the relevant questions than when denying the control questions.

Id. at 411 n.339. Irrelevant questions are interspersed as buffers. Olsen et al., *Recent Developments*, at 348.

A standard polygraph examination consists of a pre-test interview, polygraph testing, and analysis of the polygraph data. The pre-test interview serves a variety of functions, including: to "acquaint the subject with the effectiveness of the technique," thus allaying the apprehensions of the truthful subject and stimulating the deceptive subject's concern about the prospect of detection; to "assess the suitability of the subject for testing" and to develop information for formulation of polygraph test questions. Giannelli & Imwinkelried, *Scientific Evidence* 2d at 219 (footnotes omitted). The court in *Galbreth* describes additional functions of the pre-test interview as: introduction of the control question in such a way as to elicit a deceptive response; advance review of questions to avoid surprise; to prevent the need of the subject to analyze the meaning of a question; and to ensure the understanding of any terms used in the questions. *Galbreth*, 908 F. Supp. at 884-885.⁹

The examination is ordinarily conducted in a testing room, devoid of external distractions. S. Abrams, *The*

⁹ Petitioner acknowledges that "[t]here is no doubt that the polygraph can accurately measure certain physiological responses to accusatory questioning and that a correlation appears to exist between a fear of detection and a subject's physiological response." Petitioner's Brief at 21 n.7. Petitioner questions whether these physiological responses might be confused with "responses caused by other emotions." *Id.* As set forth in the text, the pre-test interview is designed to minimize physiological responses due to these other emotions or extrinsic factors. This, along with a properly constructed testing room, the repetition of the test in two or more charts, and the post-test interview further serve to minimize extrinsic factors affecting the test. The success of minimizing these factors is demonstrated in the high accuracy rates reported for polygraph testing in the scientific literature.

Complete Polygraph Handbook 37 (1989). During the actual examination, a series of tests,¹⁰ asking the same questions but in a different order, are given. This is to ensure that there is consistent physiological response to the same questions, thus reducing the potential that outside stimuli influence test results. *Id.* at 71. Physiological responses are recorded on a moving chart. During the testing, the examiner makes appropriate markings on the chart to indicate where each question is asked and answered and whether there are interfering factors which occurred that may have affected a subject's response to a particular question. *Id.* at 37.

Test interpretation is made by comparing the relative reactivity to control and relevant questions. A numerical scoring system is ordinarily employed which literally calls for measuring and comparing the rise and duration of physiological response. *Id.* at 74. Hence, judgments about the difference between responses to the relevant and control questions are minimized. In the last ten years, algorithms have been developed which allow computer-assisted chart interpretation. Olsen et al., *Recent Developments*, at 349.

Quality control, in the form of "blind" chart interpretation by a non-examining polygrapher, without knowledge of the original examiner's conclusions, is often employed by private examiners and typically employed by federal agency examiners to ensure agreement in interpretation. See Giannelli & Imwinkelried, *Scientific Evidence* 2d, at 223. A polygraph test may be interpreted as no deception indicated (NDI), deception indicated (DI), or inconclusive (IC).

Typically, following a polygraph examination, a post-test interview is conducted in which the results of the polygraph are conveyed to the subject and the subject is interviewed to determine, in part, if there was any external

¹⁰ Typically, two to five charts (test repetitions) are obtained. Olsen et al., *Recent Developments*, at 347; Giannelli & Imwinkelried, *Scientific Evidence* 2d, at 221.

stimuli that may have influenced the test. S. Abrams, *The Complete Polygraph Handbook* 85 (1989).

B. Scientific Study of the Polygraph

In 1983 and 1984, two federally-sponsored reviews of the then available scientific literature regarding polygraph were issued. The first was issued by the Office of Technology Assessment of the U.S. Congress. U.S. Congress, Office of Technology Assessment, *Scientific Validity of Polygraph Testing: A Research Review and Evaluation*, OTA-TM-H-15 (1983) [hereinafter OTA Report]. The second was issued by the U.S. Department of Defense. U.S. Department of Defense, *The Accuracy and Utility of Polygraph Testing* 2 (1984) [hereinafter DoD Report]. Each of these reviews is considered herein along with several subsequent reviews of some of the more recent scientific literature.

In February 1983 the Committee of Government Operations, U.S. House of Representatives, in response to a Presidential National Security Decision Directive (NSDD-84) which authorized increased use of polygraph examination for security screening of federal employees and civilian contractors with access to highly classified information, formally requested the Office of Technology Assessment of the U.S. Congress to conduct a review of the scientific literature on the validity of polygraph testing.

The OTA determined that there were ten field studies¹¹ and fourteen analog studies¹² on the validity of the CQ

¹¹ "Field studies investigate actual polygraph examinations and constitute the most direct evidence for polygraph test validity." OTA Report at 47 (endnote omitted). The primary problem in field studies is establishing ground truth, i.e., objectively determining the actual truth-tellers so they may be compared with the test outcomes.

¹² Analog, or laboratory, studies are investigations in which field methods of polygraph examinations are used in simulated situations. OTA Report at 61. Analog studies are typically conducted by having a portion of the subjects commit a mock crime and instructing

which met their scientific criteria. OTA Report at 97. Summarizing their review, the OTA found that those studies employing the CQ in specific incident criminal investigations found average accuracy rates in field studies of 86.3% correct detection of guilty subjects and 76% correct detection of innocent subjects. *Id.* In analog studies, the accuracy was 63.7% correct detection of guilty subjects and 57.9% correct detection of innocent subjects. *Id.* However, these average accuracy results were skewed down as the OTA chose to identify inconclusive findings as errors on the basis that "an inconclusive is an error in the sense that a guilty or innocent person has not been correctly identified." *Id.* The OTA acknowledged that exclusion of inconclusives would raise the overall accuracy rate.¹³ *Id.* The OTA did acknowledge, though critical of its study selection, a then recent "important review" which found an average field study validity of 97.2% and analog study validity of 93.2%. *Id.* at 41, citing N. Ansley, *A Review of the Scientific Literature on the Validity, Reliability and Utility of Polygraph Techniques* (Ft. Meade, Md.: National Security Agency (1983)) (found at 125 n.7).

The OTA determined that personnel security screening involved "a different type of polygraph test than specific-incident investigations" and observed that "very little screening research has been conducted" and, for that reason

them to lie about it during the polygraph test. Analog studies are sometimes criticized for their lack of realism. Honts & Quick, *The Polygraph in 1995*, at 994. This problem is reduced by offering incentives associated with the outcome of the test. *Id.* at 994 n.48.

¹³ While inconclusives may impact the utility of the polygraph, they do not impact accuracy inasmuch as an inconclusive decision would not reflect a bad judgment but, rather, reflects insufficient information to make a decision. As explained in the DoD Report at 61:

Even the most accurate test has diminishing utility as the inconclusive rate increases. Fingerprints, for example, have limited utility in investigations despite their extremely high accuracy because only occasionally can identifiable prints be recovered.

found that the scientific basis for the use of polygraph for *personnel screening* was not established. OTA Report at 99-100. The OTA did determine that

[t]he preponderance of research evidence does indicate that, when the control question technique is used in specific-incident criminal investigations, the polygraph detects deception at a rate better than chance, but with error rates that could be considered significant.

Id. at 97. The OTA urged further research and set out priorities for such research. *Id.* at 101-102.

In 1984, at the request of the Deputy Under Secretary of Defense, the Department of Defense issued a report which surveyed the then existing scientific literature regarding polygraph testing. DoD Report at 2. Observing that there has been more scientific research conducted on polygraph testing "in the last six years than in the previous 60 years," the authors of the DoD Report included a larger group of studies in its review than did the authors of the OTA Report. *Id.* at 58. Field studies reviewed demonstrated 90 to 100 percent accurate classification of guilty subjects and 85 to 100 percent accurate classification of innocent subjects after exclusion of inconclusive results. *Id.* at 37-38. Analog studies were found to

correctly classify from 75% to 100% of the guilty subjects and from 57% to 100% of the innocent subjects. The mean correct classification rate weighed for number of subjects in the study is 90% for guilty subjects and 80% for innocent subjects.

Id. at 62. In its overview, the DoD observed that while there were some limitations on the scientific research, "the research produces results significantly above chance." *Id.* at 3.

Since the OTA Report and DoD Report, there have been significant technological advances in polygraph instrumen-

tation and an increase in research in the field of physiological detection of deception and better education and training of examiners:

The period between 1986 and the present has been one of unparalleled advances in the psychophysiological detection of deception testing procedures and processes. . . . More sensitive sensors; more efficient transducers; improved means of digitizing and recording physiological data; digitizing analog data at increasingly high sample rates; and algorithms to evaluate physiological data in an unlimited fashion, all represent technical innovations that will enhance the advancement of the new and evolving science of forensic psychophysiology.

W. Yankee, *The Current Status of Research in Forensic Psychophysiology and Its Application in the Psychophysiological Detection of Deception*, 40 J. Forensic Sci. 63, 63 (1995) [hereinafter Yankee, *The Current Status*].

Under the Defense Authorization Act of 1986, the Secretary of Defense was directed to carry out research in the field of physiological detection of deception. Additionally, in 1986, Department of Defense Directive 5210.78 established the Department of Defense Polygraph Institute (DoDPI) as a higher education and research facility. Yankee, *The Current Status*, at 63.

DoDPI's role in polygraph research was described in Matte, *Forensic Psychophysiology*, at 102:

While not all published research relating to PV examinations during the past fifteen years was conducted by DoDPI, its role as a leading research entity certainly gave impetus to other research facilities and individuals . . . to engage in research regarding PV examination test formats, physiological data collection processes, physiological data analysis, diagnostic procedures and the recognition and identification of countermeasures.

Summaries of DoDPI's research are contained in its annual reports to Congress.¹⁴

In its Annual Report to Congress for Fiscal Year 1990, DoDPI summarized a report prepared by the National Security Agency which reviewed polygraph field studies conducted since 1980. That report, subsequently published in *Polygraph*,¹⁵ considered ten field studies.¹⁶ The ten studies reviewed considered a total of 2,042 examiner decisions, and the results, although excluding inconclusives, assumed that every disagreement was a polygraph error. Average accuracy was 98%. Ansley, *The Validity and Reliability*, at 177. Table 1 of the report sets forth, in part, the following results:

¹⁴ In Yankee, *The Current Status*, the author cites a number of studies either conducted, administered, or contracted by DoDPI.

¹⁵ N. Ansley, *The Validity and Reliability of Polygraph Decisions in Real Cases*, 19 *Polygraph* 169 (1990) [hereinafter Ansley, *The Validity and Reliability*].

¹⁶ L. Arellano, *The Polygraph Examination of Spanish Speaking Subjects*, 19 *Polygraph* 155 (1990); R. Edwards, *A Survey: Reliability of Polygraph Examinations Conducted by Virginia Polygraph Examiners*, 10 *Polygraph* 229 (1981); E. Elaad & E. Schahar, *Polygraph Field Validity*, 14 *Polygraph* 217 (1985); J. Matte & R. Reuss, *A Field Validation Study of the Quadri-Zone Comparison Technique*, 18 *Polygraph* 187 (1989); K. Murray, *Movement Recording Chairs: A Necessity?*, 18 *Polygraph* 15 (1989); C. Patrick & W. Iacono, *Validity and Reliability of the Control Question Polygraph Test: A Scientific Investigation*, 24 *Psychophysiology* 604 (1987); R. Putnam, *Field Accuracy of Polygraph in the Law Enforcement Environment* (1983), printed in 23 *Polygraph* 260 (1994); D. Raskin et al., *Validity of Control Question Polygraph Tests in Criminal Investigation*, 25 *Psychophysiology* 474 (1988); J. Widacki, *Analiza Przestanek Diagnozowania W. Badanich Poligraficznych (The Analysis of Diagnostic Premises in Polygraph Examinations)*, Uniwersytetu Slaskiego, Katowice (text in Polish) (1987); R. Putnam, *Field Accuracy of Polygraph in the Law Evaluation of Detection of Deception in a Riot Case Involving Arson and Murder*, 9 *Polygraph* 170 (1980).

TABLE 1

Validity of Examiners' Decisions
(inconclusives excluded)

Authors/Dates	#	/	Total # Correct	/	%
Arellano (1990)	40		40		100%
Edwards (1981)	959		943		98%
Elaad/Schahar (1985)	174		168		97%
Matte/Reuss (1989)	114		114		100%
Murray (1989)	171		168		98%
Patrick/Iacono (1987)	81		78		96%
Putnam (1983)	285		281		99%
Raskin et al. (1988)	85		81		95%
Widacki (1982)*	38		35		92%
Yamamura/Miyake (1980)	95		85		89%
TOTALS	2042		1993		98%

*Only the totals reported.

Ansley, *The Validity and Reliability*, at 171.

In a review of four CQ field studies, determined by the authors to meet the criteria for meaningful field studies, the average accuracy of field decisions for the CQ was 90.5%.¹⁷ D. Raskin et al.; *Polygraph Tests: The Scientific Status of Research on Polygraph Techniques: The Case for Polygraph Tests*, § 14-2.2.1 at 575, in 1 *Modern Scientific Evidence: The Law and Science of Expert Testimony* (D. Faigman et al. eds., 1997) [hereinafter Raskin et al.,

¹⁷ Those field studies were cited by Raskin et al. as follows: C. Honts, *Canadian Police Research Centre Field Validity Study of the Canadian Police College Polygraph Technique* (1994); C. Honts & D. Raskin, *A Field Study of the Validity of the Directed Lie Control Question*, 16 *J. Police Sci. & Admin.* 56 (1988); C. Patrick & W. Iacono, *Validity of the Control Question Polygraph Test: The Problem of Sampling Bias*, 76 *J. Applied Psychol.* 229 (1991); Raskin et al., *A Study of the Validity of Polygraph Examinations in Criminal Investigations*, National Institute of Justice (1988). Raskin et al., *Polygraph Tests: The Scientific Status*, at 575 n.38.

Polygraph Tests: The Scientific Status]. The accuracy rose to 95.5% when one study, for which the authors had some criticism, was excluded. *Id.*

Reviewing eleven analog studies, S. Abrams, *The Complete Polygraph Handbook* 190-191 (1989), found that, excluding inconclusives, overall accuracy of the CQ was "in the range of 87 percent."¹⁸ The author observed that "[t]he findings for the CQT in the laboratory, for all of its weaknesses, indicate both high validity and reliability." *Id.* at 191.

¹⁸ Those studies were cited by Abrams as follows: D. Raskin & R. Hare, *Psychopathy and Detection of Deception in Prison Population*, 15 *Psychophysiology* 126 (1978); D. Hammond, *The Responding of Normals, Alcoholics, and Psychopaths in a Laboratory Lie-Detection Experiment*, California School of Professional Psychology (1980) (unpublished doctoral dissertation); J. Widacki & F. Horvath, *An Experimental Investigation of the Relative Validity and Utility of the Polygraph Technique and Three Other Common Methods of Criminal Identification*, 23 *J. Forensic Sci.* 596 (1978); L. Rovner et al., *Effects of Information and Practice on Detection of Deception*, paper presented at Society for Psychophysiological Research (Madison, Wisconsin, 1979), printed in 16 *Psychophysiology* 197 (1979); C. Honts & R. Hodes, *The Effects of Simple Physical Countermeasures on the Physiological Detection of Deception*, 19 *Psychophysiology* 564 (1982) (abstract); C. Honts & R. Hodes, *The Effects of Multiple Physical Countermeasures on the Detection of Deception*, 19 *Psychophysiology* 564 (1982) (abstract); R. Gatchel et al., *The Effect of Propranolol on Polygraphic Detection of Deception*, University of Texas Health Sciences Center (1983) (unpublished manuscript); G. Barland & D. Raskin, *An Evaluation of Field Techniques in Detection of Deception*, 12 *Psychophysiology* 321 (1975); J. Podlesny & D. Raskin, *Effectiveness of Techniques and Physiological Measures in the Detection of Deception*, 15 *Psychophysiology* 344 (1978); J. Kircher & D. Raskin, *Computerized Decision-Making in Physiological Detection of Deception*, 18 *Psychophysiology* 204 (1981); G. Barland, *A Validation and Reliability Study of Counterintelligence Screening Test*, Security Support Battalion, 902d Military Intelligence Group, Fort George G. Meade, Maryland (1981). S. Abrams, *The Complete Polygraph Handbook* 246-249 (1989).

Raskin et al., *Polygraph Tests: The Scientific Status*, reviewed eight "high quality" analog studies of the CQ which had been reported between 1978 and 1994.¹⁹ The average accuracy of these CQ analog studies correctly classified approximately 90% of the subjects. *Id.* at § 14-2.2.1 at 572.

Petitioner argues that "a highly motivated subject . . . may employ countermeasures to obscure an accurate reading of physiological responses." Petitioner's Brief at 24-25. Amicus is aware of those studies which indicate some decreased accuracy of the polygraph when subjects are trained to employ countermeasures. See, e.g., C. Honts, *Interpreting Research on Countermeasures and the Physiological Detection of Deception*, 15 *J. Police Sci. & Admin.* 204 (1987). Although movement by the subject has been considered to be a possible countermeasure, use of an activity monitor placed beneath the subject's chair has been found to successfully detect these movements. S. Abrams & M. Davidson, *Counter-Counter-*

¹⁹ Those analog studies were cited by Raskin et al. as follows: A. Ginton et al., *A Method for Evaluating the Use of the Polygraph in a Real-Life Situation*, 67 *J. Applied Psychol.* 131 (1982); C. Honts et al., *Mental and Physical Countermeasures Reduce the Accuracy of Polygraph Tests*, 79 *J. Applied Psychol.* 252 (1994); S. Horowitz et al., *The Directed Lie: Standardizing Control Questions in the Physiological Detection of Deception* (in press, *Psychophysiology*); J. Kircher & D. Raskin, *Human Versus Computerized Evaluations of Polygraph Data in a Laboratory Setting*, 73 *J. Applied Psychol.* 291 (1988); J. Podlesny & D. Raskin, *Effectiveness of Techniques and Physiological Measures in the Detection of Deception*, 15 *Psychophysiology* 344 (1978); J. Podlesny & C. Truslow, *Validity of an Expanded-Issue (Modified General Question) Polygraph Technique in a Simulated Distributed-Crime-Roles Context*, 78 *J. Applied Psychol.* 788 (1993); D. Raskin & R. Hare, *Psychopathy and Detection of Deception in a Prison Population*, 15 *Psychophysiology* 126 (1978); L. Rovner et al., *Effects of Information and Practice on Detection of Deception*, 16 *Psychophysiology* 197 (1979). Raskin et al., *Polygraph Tests: The Scientific Status* § 14-2.2.1 at 572 n.33.

measures in *Polygraph Testing*, 17 *Polygraph* 16 (1988). Computerized analysis of the polygraph also offers a means of significantly reducing the effectiveness of countermeasures. Raskin et al., *Polygraph Tests: The Scientific Status*, § 14-2.2.1 at 577-78.

It is important to note that subjects who are only given information on countermeasures and who are not actually trained in their use have been shown to be unable to significantly affect the accuracy of the polygraph. *Id.*; L. Rovner, *The Accuracy of Physiological Detection of Deception for Subjects with Prior Knowledge*, 15 *Polygraph* 1 (1986). Moreover, the ability to consciously affect the outcome of a test is not unique to polygraph.²⁰ Use of countermeasure safeguards is an appropriate subject of inquiry by the trial court in performing its gatekeeping function under *Daubert* and as a legitimate subject of cross-examination during the adversarial process.

Many other criticisms of polygraph accuracy have been rebutted by empirical data. See J. Buckley & L. Senese, *The Influence of Race and Gender on Blind Polygraph Chart Analyses*, 20 *Polygraph* 247 (1991) (no significant difference in polygraph accuracy due to subjects' race or gender); D. Raskin & R. Hare, *Psychopathy and Detection of Deception in a Prison Population*, 15 *Psychophysiology* 126 (1978) (no significant difference in polygraph accuracy between psychopaths and non-psychopaths); but see M. Floch, *Limitations of the Lie Detector*, 40 *J. Crim. Law & Criminology* 651 (1950); S. Abrams, *The Validity of the Polygraph Technique with Children*, 3 *J. Police Sci. & Admin.* 310 (1975) (children over the

²⁰ See, e.g., *Rock*, 483 U.S. at 61 (recognizing that, notwithstanding procedural safeguards, the "motivations" of a subject of hypnotically-refreshed testimony may not be controlled); L. Binder & J. Parkratz, *Neuropsychological Evidence of a Fabricated Memory Complaint*, 9 *J. Clinical & Experimental Neuropsychology* 167, 167 (1987) ("performance on neuropsychological tests is strongly affected by the motivation of the patient").

age of eleven have high polygraph accuracy with accuracy rates dropping at lower ages); D. Raskin (Ed), *Psychological Methods in Criminal Investigation and Evidence* 253 (1989) (drugs have minimal effect on polygraph outcome); but see W. Waid et al., *Meprobamate Reduces Accuracy of Physiological Detection of Deception*, 212 *Science* 71 (1981).

At least one study indicates that polygraph evidence is more reliable than other evidence traditionally admitted at trial. J. Widacki & F. Horvath, *An Experimental Investigation of the Relative Validity and Utility of the Polygraph Technique and Three Other Common Methods of Criminal Identification*, 23 *J. Forensic Sci.* 596 (1978). There, eighty volunteer subjects were divided into twenty groups of four. In each group, one was assigned to pick up a parcel from one of two doorkeepers of a building. Each of the twenty subjects brought an information sheet and envelope and left them with the doormen. Each subject signed a form in order to receive the package. The doormen knew in advance that participants would be coming. All eighty subjects were fingerprinted and provided handwriting samples. The doormen were each presented a set of four pictures and were required to select the person from each group who had picked up the package. A handwriting expert sought to identify the handwriting of the perpetrator from each group. A fingerprint expert sought to identify the perpetrator by lifting fingerprints from the envelopes and forms left with the doormen. A polygraphist examined each set of four subjects and made a decision as to who was the perpetrator.

Widacki & Horvath found that, excluding inconclusives, the fingerprint expert was correct in 100% of his decisions, the polygrapher was correct in 95% of his decisions, the handwriting expert was correct in 94% of his decisions, and the eyewitness was correct in 64% of his decisions. Interestingly, when inconclusives were included, the percentage of correctly resolved cases changed to 90%

polygraph, 85% handwriting, 35% eyewitness, and 20% fingerprint.

C. Education and Training of Polygraph Examiners

Considerable emphasis has been made on improving the education and training of polygraph examiners. Initially, using the Air Force polygraph training program as a model,²¹ DoDPI now offers an academic curriculum for federal examiners that

provides a basis for a thorough understanding of the scientific psychological, physiological, and psychophysiological concepts, systems, processes, and applications involved; as well as the scientific bases for test development, standardized test administration, research methodology, statistics and ethics.

Yankee, *The Current Status*, at 63. In addition to completing the DoDPI training, candidates for DoD polygraph examiners must be "a graduate of an accredited four-year college or have equivalent experience that demonstrates the ability to master graduate-level academic courses," have two years law enforcement investigative experience, be of high moral character as confirmed by background investigation, and complete a minimum of six months on-the-job internship. U.S. Department of Defense Polygraph Program: Annual Polygraph Report to Congress for Fiscal Year 1996, at 14. Currently, all federal agencies receive their basic polygraph training at DoDPI. *Id.* Further, all federal examiners are required to complete eighty hours of continuing education every two years. *Id.* at 15.

Numerous states now provide for licensing of polygraphers. See Giannelli & Imwinkelried, *Scientific Evi-*

²¹ U.S. Department of Defense Polygraph Program: Report to Congress for Fiscal Year 1986, reprinted in 16 Polygraph 53, 63 (1986) (The "Air Force program has served as a model for our expansion and the characteristics which made it worthy of emulation are now standard throughout DoD.")

dence 2d at 219. Some of these states require continuing education for examiners. *Id.* At least one state, New Mexico, has adopted a rule of evidence requiring stringent minimum qualifications for polygraphers who testify as experts. See N.M. Stat. Ann. § 11-707(B) (requiring a minimum of five years experience in administration and interpretation of polygraph test and successful completion of twenty or more hours of continuing education in the field of polygraphy during the twelve-month period immediately prior to the date of subject examination).

Polygraphers who are full members of the APA must have graduated from an APA-accredited polygraph school,²² completed no less than 200 actual PV examinations in a standardized polygraph technique, hold a current valid license to practice forensic psychophysiology issued by any state or federal agency requiring such license and receive a bachelor's degree from a college or university accredited by a regional accreditation board. See Matte, *Forensic Psychophysiology*, at 569-70. The APA maintains standards of practice and ethics for its members, *id.*, and conducts various regional and national seminars on polygraphy for its members. Giannelli & Imwinkelried, *Scientific Evidence* 2d, at 219.²³

²² The APA has, for some time, administered an accreditation program for polygraph schools. Giannelli & Imwinkelried, *Scientific Evidence* 2d, at 218. See also American Polygraph Association Manual for Polygraph School Accreditation (1997) (on file with the APA).

²³ Petitioner acknowledges that the APA and the American Association of Police Polygraphists (AAPP) publish standards for administering polygraphs and observes that many polygraph examiners do not belong to either the APA or AAPP. Petitioner's Brief at 23-24. Amicus initially observes that the polygraph examiner here was a federal examiner and, given the stringent requirements of DoDPI, federal examiners are not subject to this criticism. As to non-federal examiners, Amicus acknowledges that many examiners do not belong to either the APA or AAPP and are not graduates of an accredited polygraph school. However, due

IV. THE ADMISSION OF POLYGRAPH EVIDENCE DOES NOT OVERWHELM OR IMPERMISSIBLY INTRUDE ON FUNCTIONS PERFORMED BY THE TRIER OF FACT

Petitioner argues that "[e]ven assuming that polygraph testing had a high degree of reliability," such evidence may potentially encroach upon the proper functioning of the trier of fact as "juries may be unduly swayed by the polygraph expert's opinion" and "such evidence would nonetheless tend to infringe on the jury's role of determining witness credibility." Petitioner's Brief at 26-27. Although stated by petitioner as distinct arguments, both rely on the premise that the trier of fact will be so overwhelmed by polygraph evidence that it will relinquish its role to the polygraph expert. The weight of judicial and scientific authority does not support this premise.

In *United States v. Piccinonna*, the Eleventh Circuit observed that there is "a lack of evidence that juries are unduly swayed by polygraph evidence." 885 F.2d at 1535. In *United States v. Gipson*, 24 M.J. 246 (C.M.A. 1987), the Court of Military Appeals, expressing its "confidence in court-martial panels," noted:

One fear we do not have is that fact finders will be overwhelmed by polygraph testimony. . . . A number of recent studies refute that contention, and their authors conclude that juries generally are capable of evaluating polygraph evidence and giving it due weight.

to legislation and other changes in the field, "a large portion of the least competent" examiners have left the field. See Raskin et al., *Polygraph Tests: The Scientific Status*, § 14-2.3 at 582. This has had "a salutary effect on the level of competence and practice in the field." *Id.* The fact that there may be unqualified polygraphers does not require wholesale exclusion of the science from the courtroom. Rather, the court may perform its traditional "gatekeeping" role by assessing whether a particular expert witness is sufficiently qualified to offer opinion testimony based on that science and the state may impose reasonable licensing standards for polygraphers.

24 M.J. at 253 n.11 (citing E. Imwinkelried, *The Standard for Admitting Scientific Evidence: A Critique from the Perspective Of Juror Psychology*, 100 Mil. L. Rev. 99, 114-15 (1983)). See also *United States v. Piccinonna*, 885 F.2d at 1533. Indeed, scientific evidence has become part of the modern trial and, as such, jurors are not likely to be overly influenced by such evidence. See *Daubert*, 509 U.S. at 595 (arguments for excluding evidence based on fears of "befuddled juries . . . confounded by absurd and irrational pseudoscientific assertions . . . [are] overly pessimistic about the capabilities of the jury, and of the adversary system generally").

Scientific literature supports the conclusion that jurors are not unduly influenced by polygraph evidence.²⁴ Commentators generally agree with this assessment. See, e.g., C. Honts & M. Perry, *Polygraph Admissibility: Changes and Challenges*, 16 Law & Hum. Behav. 357, 366 (1992) ("[s]tudies tend to show that juries are more inclined not to give extraordinary weight to polygraph evidence"); McCall, *Misconceptions and Reevaluation*, at 376 ("[t]he continued use of the undue deference rationale for the denial position also demeans the ability of modern juries").

Polygraph evidence is, of course, not the only type of evidence which may be offered regarding indicators of witness credibility. In *United States v. Cacy*, 43 M.J. 214, 218 (1995), the court observed that it is usually permissible to allow an expert to testify as to whether "a victim appears rehearsed or coached, or is feigning." Testimony has also been permitted regarding whether "counter-intuitive conduct, such as recanting an accusation, inconsistent statements, or failing to report abuse is

²⁴ See E. Carlson et al., *The Effect of Lie Detector Evidence on Jury Deliberations: An Empirical Study*, 5 J. Pol. Sci. & Admin. 148 (1977); A. Markwart & B. Lynch, *The Effect of Polygraph Evidence on Mock Jury Decision-Making*, 7 J. Pol. Sci. & Admin. 324 (1979); R. Peters, *A Survey of Polygraph Evidence in Criminal Trials*, 68 A.B.A. J. 162, 165 (1982).

not necessarily inconsistent with the truthful accusation." *United States v. Scheffer*, at 446.

Psychiatrists and other clinicians have been permitted to provide expert opinion testimony as to whether a party is malingering or accurately representing his competency, injury, or disability. See, e.g., *United States v. Denny-Shaffer*, 2 F.3d 999, 1023 n.8 (10th Cir. 1993). While such opinions may be based on clinical impressions alone,²⁵ *Liles v. Saffle*, 945 F.2d 333 (10th Cir. 1991), such testimony may also be based on certain psychological tests; in particular, internal validity scales of the Minnesota Multiphasic Personality Inventories (MMPI). See, e.g., *United States ex rel. S.E.C. v. Billingsley*, 766 F.2d 1015, 1026 (7th Cir. 1985) (in which experts describe the MMPI as "a test that has numerous scales, designed to elicit malingering or an attempt to . . . lie"). As set forth by Faust et al., the use of such internal validity scales of the MMPI are supported by a "body of validating research" which supports detection of malingering. 1 D. Faust et al., *Brain Damage Claims: Coping with Neuropsychological Evidence* 429 (1991). That research demonstrates a validity rate comparable to polygraphs.²⁶

Polygraph evidence, on the same basis as that evidence discussed above, is not intended to take from the trier of fact issues of guilt, innocence, or credibility. Rather, polygraph evidence, like other relevant scientific evidence, is intended to provide in appropriate cases evidence of

²⁵ See 1 D. Faust et al., *Brain Damage Claims: Coping with Neuropsychological Evidence* 429 (1991) ("[t]here appears to be a paucity of research which suggests that clinicians have the ability to detect malingering").

²⁶ Research has demonstrated the F minus K index as a reasonably accurate discriminator. H. Gough, *The F Minus K Dissimulation Index for the MMPI*, 14 J. Consulting Psych. 408 (1950) (depending on the cut-off applied, correctly identified authentic profiles between 88% to 97.5% of time while correspondingly mis-identifying simulated profiles 12% to 28% of the time).

whether a witness's physiological responses to certain relevant questions are or are not indicative of deception. Like other relevant scientific evidence, polygraph evidence is simply intended to be a part of the evidence to be assessed through the adversarial process.

V. THE ADMISSION OF POLYGRAPH EVIDENCE DOES NOT CREATE UNNECESSARY COLLATERAL LITIGATION

Both petitioner and Amici Curiae State of Connecticut and 27 States [hereinafter Amici States] speculate that attempts to admit results of polygraph examinations will produce lengthy collateral litigation²⁷ in the form of evidentiary hearings regarding "the validity of the test, the testing procedures utilized, the qualifications of the examiner, the conditions under which the test was administered, and the content of the questions asked." Amici States Brief at 15-16. See also Petitioner's Brief at 29.

In addressing this argument, the court in *United States v. Scheffer* observed that it was "unaware of any such flood of polygraph cases" after its decision in *United States v. Gipson* and further observed that "our measure should be the scales of justice, not the cash register." 44 M.J. at 448. Additionally, petitioner and Amici States' fear of lengthy collateral litigation ignores the states' prerogative to reduce the uncertainties of admission of polygraph evidence by establishing reasonable parameters and guidelines for its admission at trial. As observed by this Court in *Rock*, a state "would be well within its powers if it established guidelines to aid trial courts in the evaluation of posthypnosis testimony." *Rock* at 61. Reasonable guidelines could also be appropriately implemented as to polygraph evidence. An example of such guidelines is

²⁷ Amici States observe that a number of states currently follow a *per se* exclusion of polygraph evidence. Similarly, in *Rock*, a number of states maintained a *per se* exclusion of hypnotically-refreshed testimony. *Rock* at 47 n.14.

found in New Mexico's rules of evidence. N.M. Stat. Ann. § 11-707;²⁸ see also McCall, *Misconceptions and Re-evaluation*, at 385-388.

Further, trial courts routinely consider expert qualifications, testing procedure, validity, and application of many types of scientific evidence. Polygraph evidence should be considered by the trial courts on the same basis.

CONCLUSION

For the foregoing reasons, the judgment of the United States Court of Appeals for the Armed Forces should be affirmed.

Respectfully submitted,

GORDON L. VAUGHAN
VAUGHAN & DEMURO
111 South Tejon, Suite 410
Colorado Springs, CO 80903
(719) 578-5500
Counsel for Amicus Curiae
American Polygraph
Association

²⁸ In addition to providing minimum qualifications a polygrapher must meet to give testimony of polygraph results, the New Mexico statute requires, in part: protocol requirements for the examination; recording of the pre-test interview, actual testing, and post-test interview; copies of the recording along with the charts, report, and a list of all polygraph examinations taken by the examinee to the opposing party; and thirty days' notice of intent to offer polygraph evidence at trial.